DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-000047
Date Inspected: 16-Dec-2006

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 800
OSM Departure Time: 1700
Location: Shanghai, China

CWI Name:	Liu Liu			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☐ Yes	☑ No	☐ N/A	**Approved WPS:**	☐ Yes	☐ No	☑ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component:

Summary of Items Observed:

Office of Structural Materials Quality Assurance Inspector (QA), David McClary observed quality control functions related to procedure qualification (PQR) testing at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

The QA Inspector observed RT film on 1G 1G Gas Metal Arc Welding (GMAW) procedure test, HP-2006119-5. ZPMC Quality Control (QC) rejected the weld due to porosity.

The QA Inspector observed welding of a Procedure Qualification (PQR) test plate identified as HP-2006119-6. The test was conducted using Gas Metal Arc Welding (GMAW), Supertech SM-71, electrode in the 1G (flat) position to AWS D1.5, Section 5.13 (Production Procedure). ZPMC has changed to a 65% Argon, 35% CO2 gas mixture. The QA Inspector observed ZPMC Quality Control (QC) recording the essential variable (amps, volts, travel speed) for each pass and randomly verified the parameters using a Fluke® amperage / voltage meter and a stopwatch. The welding appeared to comply with the contract documents.

The QA Inspector observed the completion welding of a Procedure Qualification (PQR) test plate identified as HP-2006130. The test was conducted using Submerged Arc Welding (SAW), Lincoln LA-85 electrode with MIL-800 HPNi flux in the 1G (flat) position to AWS D1.5, Section 5.13 (Production Procedure) on 75mm thick HPS 485W material. Testing began on 5-13-06.

The QA Inspector observed mechanical testing of the 1G FCAW procedure identified as HP-2006107-7 test samples. The testing appeared to comply with the contract documents.

Summary of Conversations:

ZPMC Testing Center Director Mr. Liu Liu asked if ZPMC could change the 1G Flux Core Arc Welding (FCAW) procedure identified as HP-2006107-7 to an AWS Section 5.13 (Production Procedure) test plate. It had been initially welded as a 5.12 (Maximum Heat Input) procedure. After consultation with Caltrans Engineer Jim Merrill, it was decided that the actual conducting of the test was similar enough to allow them to vary the parameters within 5.13. Mr. Merrill stressed that ZPMC cannot switch back and forth, but must decide the method they want to vary the procedure and stick with that method. QA relayed this information to ABF Mr. Craig Knops and Mr. Liu Liu.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	McClary,David	Quality Assurance Inspector
Reviewed By:	Lowry,Patrick	QA Reviewer